Trend Study 8B-13-00

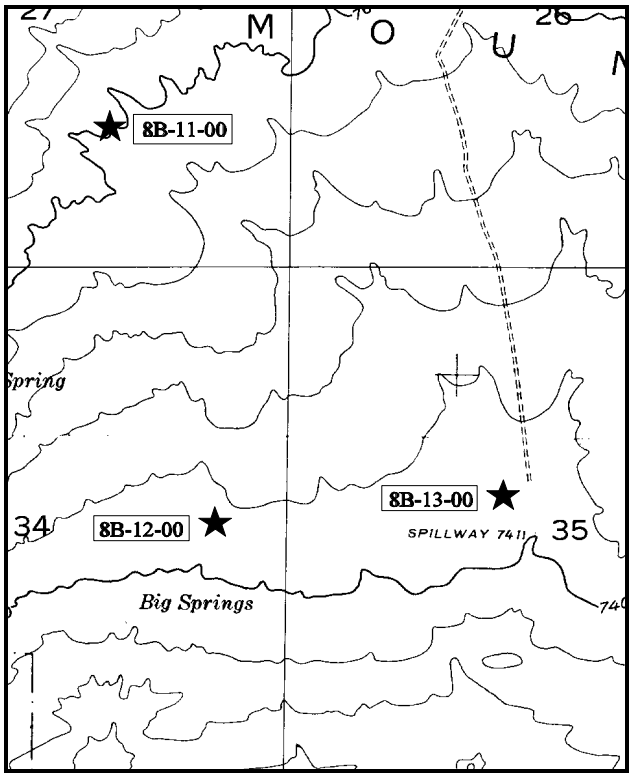
Study site name: Lower Big Meadow . Range type: Wet Meadow .

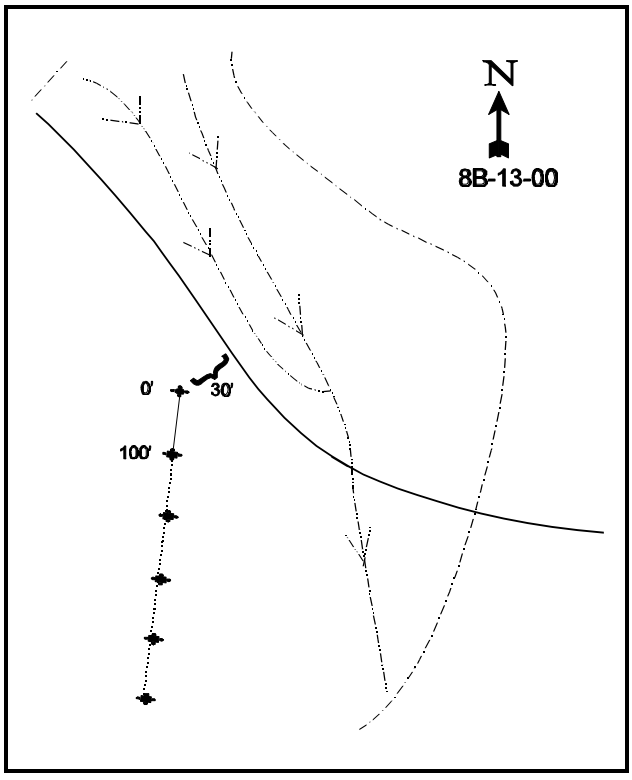
Compass bearing: frequency baseline 165°M .

First frame placement on frequency belts 5 feet. Frequency belt placement; line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

LOCATION DESCRIPTION

From Dutch John, proceed north towards Antelope Flat on Highway U.S. 191 for approximately 8 miles. Before the Wyoming border, turn east on the Antelope Flat Road towards Goslin Mountain. Go 2.8 miles and turn right towards Goslin Mountain. Bear right and drive 1.3 miles to a gate. Continue 4.5 miles to a fork. Bear right and proceed 0.8 miles passing study 8B-10-00 to a four-way intersection. Bear left and drive 0.6 miles to a post in a meadow 30 feet south of the road. The road is faint as it crosses the large meadow. The 0-foot stake is marked with browse tag #37.





Map Name: Goslin Mtn. Diagrammatic Sketch

Township 3N , Range 23E ,Section 35 UTM 4534895.977 N, 643914.120 E

DISCUSSION

Trend Study No. 8B-13 (9-24)

This is a new study site established in 1995 to monitor wildlife and livestock impacts on meadows in the Goslin Mountain area. This study, Lower Big Meadow, was setup on a meadow about one-half of a mile east of study #12. It is a drier site than site #12, but has the same elevation, slope, and aspect. There is water flowing in a small stream to the north-west of the study site. Pellet group quadrat frequency data indicated moderate deer and heavy cattle use in 1995. Pellet group data taken along the study site baseline in 2000, estimate light wildlife use (<1 deer and 3.4 elk days use/acre or 8 edu/ha). Spring pronghorn antelope pellet groups were fairly abundant and some sage grouse scat was also encountered. Cattle were not on the allotment as of July 6th 2000, but use from the 1999 season is estimated at 52 days use/acre.

The soil is deep with an effective rooting depth estimated at nearly 20 inches. There is very little surface rock. Soil texture is a sandy clay loam to loam with a moderately alkaline soil reaction (pH of 8.0). Phosphorus is limited at only 2.4 ppm where values less than 10 ppm can limit normal plant growth and development. Vegetation and litter cover are abundant and prevent any erosion.

Do to the drier nature of this site, species composition is much more diverse than the other meadow sites. Ten to 12 grasses, two sedges, and one rush provided 32% cover in 1995 and 37% cover in 2000. The most common grasses include Canada and Kentucky bluegrass which account for about half of the grass cover. These species are very tolerant of grazing and often occur on disturbed sites. Grasses considered decreasers on this range type include: slender wheatgrass, thickspike wheatgrass, Nebraska sedge, prairie Junegrass and Sandberg bluegrass.

Forbs are more abundant on this site than on site #11 or #12. Combined, they provided a total of 39% cover in 1995 and 34% in 2000. Unfortunately, the most abundant forb is the mat forming rose pussytoes. Other abundant forbs include Pacific aster and dandelion.

1995 APPARENT TREND ASSESSMENT

The soil trend appears stable with abundant well dispersed vegetation and litter cover. There is no browse trend because no shrubs occur on the site. The herbaceous understory is very diverse and abundant. However, like the other meadows sampled, less desirable increaser species dominate the understory. Only 18% of the grass cover comes from decreaser species. Fifty-six percent of the forb cover comes from rose pussytoes, a mat forming species, which provides very little forage value. Most of the other forbs are low growing increasers who's dominance indicates over grazing. Overall, 74% of the total vegetative cover is contributed by increaser grasses and forbs.

2000 TREND ASSESSMENT

Trend for soil is stable with abundant protective ground cover and little bare ground exposed. There is no erosion occurring on the site. There are no shrubs on the site so there is no browse trend. Trend for the herbaceous understory is down slightly due to a slight decline in the sum of nested frequency for perennial grasses and a substantial decline in the sum of nested frequency of perennial forbs. The grass composition is dominated by the increaser, Kentucky bluegrass, which increased significantly in nested frequency and now accounts for 33% of the grass cover. A Carex and Canada bluegrass are also abundant and combine to produce 44% of the grass cover. Nested frequency of Carex, remained stable while Canada bluegrass declined significantly. Nebraska sedge is found on this site but at a much lower frequency compared to the other meadows. It increased significantly in nested frequency but it only has a quadrat frequency of 25% and a cover value less than 1%. The forb composition is still dominated by rose pussytoes which currently provides 59% of

the forb cover. Field milkvetch, thistle, horsetail, fleabane, and dandelion are also fairly abundant.

TREND ASSESSMENT
soil - stable (3)
browse - no shrubs on the site (NA)
herbaceous understory - down slightly (2) especially for forbs

HERBACEOUS TRENDS --
Herd unit 08B, Study no: 13

Type	Species	Nested Frequency '95	Nested Frequency '00	Quadrat Frequency '95	Quadrat Frequency '00	Average Cover % '95	Average Cover % '00
G	Agropyron dasystachyum	157	*84	46	24	1.55	.75
G	Agropyron trachycaulum	57	78	21	28	.45	1.19
G	Bromus carinatus	-	*35	-	13	-	.55
G	Carex nebraskensis	3	*64	1	21	.03	.80
G	Carex spp.	297	291	84	90	6.59	8.07
G	Hordeum brachyantherum	6	4	3	3	.04	.04
G	Juncus balticus	70	80	24	33	1.12	1.43
G	Koeleria cristata	87	*36	30	15	3.23	.66
G	Muhlenbergia richardsonis	91	49	25	18	2.37	1.97
G	Poa compressa	238	*145	68	42	9.39	8.10
G	Poa fendleriana	-	1	-	1	-	.03
G	Poa pratensis	94	*240	26	61	5.67	12.33
G	Poa secunda	31	12	9	7	.61	.16
G	Sporobolus cryptandrus	41	*-	13	-	.21	-
G	Stipa columbiana	-	*19	-	8	-	.45
G	Stipa lettermani	30	15	9	9	.64	.27
Total for Annual Grasses		0	0	0	0	0	0
Total for Perennial Grasses		1202	1153	359	373	31.94	36.87
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F	Achillea millefolium	22	36	9	13	.52	.66
F	Antennaria rosea	306	*253	79	71	21.67	19.97
F	Arabis spp.	5	-	2	-	.01	-
F	Astragalus agrestis	115	*135	40	49	1.58	3.70
F	Aster chilensis	177	*70	55	22	3.19	2.07
F	Astragalus spp.	-	*4	-	4	-	.02
F	Cirsium spp.	119	81	47	31	1.04	1.35
F	Convolvulus arvensis	-	1	-	1	-	.03
F	Cymopterus spp.	-	4	-	1	-	.00
F	Descurainia spp. (a)	3	-	1	-	.00	-
F	Draba spp. (a)	15	*-	5	-	.02	-
F	Equisetum spp.	113	141	44	59	.39	.90

Type	Species	Nested Frequency '95	Nested Frequency '00	Quadrat Frequency '95	Quadrat Frequency '00	Average Cover % '95	Average Cover % '00
F	Erigeron spp.	62	90	20	31	.41	1.06
F	Eriogonum spp.	3	8	1	2	.03	.06
F	Lithospermum spp.	-	1	-	1	-	.03
F	Potentilla anersina	56	49	21	16	.69	.80
F	Potentilla gracilis	15	14	4	6	.04	.22
F	Ranunculus testiculatus (a)	2	-	1	-	.00	-
F	Sedum lanceolatum	3	-	1	-	.00	-
F	Senecio pauperculus	4	-	1	-	.00	-
F	Sisyrinchium spp.	183	*-	61	-	2.05	-
F	Taraxacum officinale	189	*107	63	38	6.05	2.22
F	Viola spp.	33	18	10	8	.73	.55
F	Zigadenus venenosus	9	*-	3	-	.16	-
Total for Annual Forbs		48	0	16	0	0.46	0
Total for Perennial Forbs		1386	1012	452	353	38.20	33.70
Total for Forbs		1434	1012	468	353	38.67	33.70

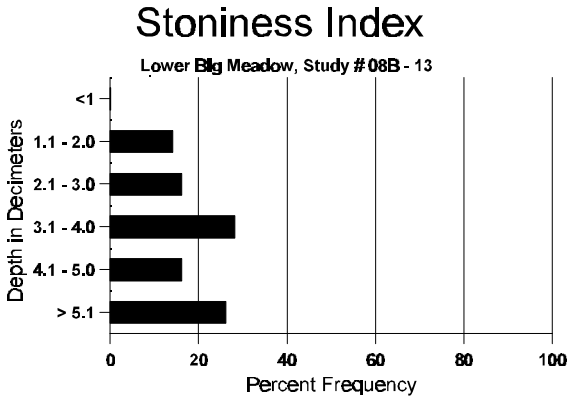
* Indicates significant difference at % = 0.10

BASIC COVER --
Herd unit 08B, Study no: 13

Cover Type	Nested Frequency '95	Nested Frequency '00	Average Cover % '95	Average Cover % '00
Vegetation	499	499	68.32	78.12
Rock	9	-	.01	0
Pavement	-	2	0	.00
Litter	495	478	63.81	72.36
Cryptogams	38	7	.79	.04
Bare Ground	92	80	.52	1.74

SOIL ANALYSIS DATA --
Herd Unit 8B, Study # 13, Study Name: Lower Big Meadow

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
19.91	52.4 (18.03)	8.0	49.0	27.7	23.3	3.5	2.4	444.8	1.9



PELLET GROUP FREQUENCY --
Herd unit 08B, Study no: 13

Type	Quadrat Frequency		Pellet Transect	
	'95	'00	Pellet Groups per Acre '00	Days Use per Acre (ha) '00
Rabbit	16	3	174	N/A
Antelope	-	1	87	7 (17)
Elk	2	-	44	3 (8)
Deer	12	4	9	1 (2)
Cattle	40	13	618	52 (127)
Sage Grouse	-	-	26	N/A